

CLAIMS

1. A method for predicting the failure of an electronic circuit in an electronic device, the method comprising:
 - receiving a measured value for current draw of the electronic circuit from at least one voltage supply;
 - receiving at least one measured value for an environmental condition;
 - determining if the measured current draw is outside a pass range for the measured environmental condition; and

10 alerting of a potential failure of the electronic circuit if the measured current draw is outside the pass range.

2. The method of claim 1, further comprising monitoring at least one operating condition of the electronic circuit, and wherein determining if the measured current draw is outside a pass range further comprises determining if the measured current draw is outside a pass range for the operating condition of the electronic circuit.

3. The method of claim 2, wherein the operating condition includes a CPU utilization level.

4. The method of claim 2, wherein the operating condition includes a clock frequency.

5. The method of claim 1, further comprising recording the current draw and environmental condition of the electronic circuit in a circuit log.

6. The method of claim 5, wherein if the electronic circuit fails, isolating the electronic circuit from among a plurality of potentially failed electronic circuits in the electronic device using the recorded current draw and environmental condition of the electronic circuit.

7. The method of claim 1, further comprising monitoring the current draw of significant circuit functions.

8. A system for predicting the failure of an electronic circuit, the system comprising:
 - a current monitor configured to receive a measured value for a current draw to the electronic circuit from at least one voltage source;
 - an environment monitor configured to receive a measured value for at least one environmental condition of the electronic circuit;
 - a circuit state monitor configured to determine at least one operating condition of the electronic circuit; and
- 10 a failure alert unit configured to provide an alert notification when the current draw to the electronic circuit is outside a pass range at the measured environmental condition and the measured operating condition of the electronic circuit.
9. The system of claim 8, wherein the at least one operating condition includes a CPU utilization level.
- 15 10. The system of claim 8, wherein the at least one operating condition includes a clock frequency.
11. The system of claim 8, further comprising a circuit log configured to record the current draw, environmental condition and operating condition in computer readable memory.
- 20 12. The system of claim 8, wherein the current monitor is further configured to measure the current draw of significant circuit functions.
13. A method for manufacturing an electronic circuit, the method comprising:
 - assembling the electronic circuit;
 - measuring a current draw of the electronic circuit at different environment conditions and operating conditions; and
 - recording the current draw in an operating matrix, the operating matrix configured to be used during normal operation of the electronic circuit to alert when the current draw to the electronic circuit is outside a pass range.
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14. The method of claim 13, wherein recording the current draw in an operation matrix further comprises recording the current draw in nonvolatile memory.

15. The method of claim 13, further comprising placing the
5 assembled electronic circuit in a controlled environment.

16. The method of claim 13, further comprising monitoring the current draw of significant circuit functions.

17. A computer program product embodied in a tangible media comprising:

computer readable program codes coupled to the tangible media for predicting the failure of an electronic circuit in an electronic
5 device, the computer readable program codes configured to cause the program to:

measure a current draw of the electronic circuit from at least one voltage supply;

measure at least one environmental condition at the electronic
10 circuit;

determine if the measured current draw is outside a pass range for the measured environmental condition; and

alert of a potential failure of the electronic circuit if the measured current draw is outside the pass range.

15 18. The computer program product of claim 17, further comprising computer readable program code configured to cause the program to monitor at least one operating condition of the electronic circuit, and wherein the computer readable program code to determine if the measured current draw is outside a pass range includes computer
20 readable program code configured to cause the program to determine if the measured current draw is outside a pass range for the operating condition of the electronic circuit.

19. The computer program product of claim 18, wherein the operating condition includes a CPU utilization level.

20. The computer program product of claim 18, wherein the operating condition includes a clock frequency.
21. The computer program product of claim 17, further comprising computer readable program code configured to cause the program to record the current draw and environmental condition of the electronic circuit in a circuit log.
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21. The computer program product of claim 17, further comprising computer readable program code configured to cause the program to monitor the current draw of significant circuit functions.
22. A system for predicting the failure of an electronic circuit in an electronic device, the method comprising:
 - means for receiving a measured value for current draw of the electronic circuit from at least one voltage supply;
 - 5 means for receiving at least one measured value for an environmental condition;
 - means for determining if the measured current draw is outside a pass range for the measured environmental condition; and
 - 10 means for alerting of a potential failure of the electronic circuit if the measured current draw is outside the pass range.